MOOCs, OERs and Consciousness

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Wait, what….? Consciousness?

OK, let’s set the stage:

- OERs are needed for MOOCs (and open learning generally)
- MOOCs are based on Connectivism
- and Connectivism is based on neural networks
- and neural networks are the source of consciousness

So for today, let’s work in the other direction, from our understanding of consciousness, to what learning (MOOCs, OERs) need to be

Corine: awareness of your presence and your surroundings

Jenaro: Asking the right questions

What's in your head?

Kelli: awareness of stimuli

leeann: constant passing thoughts unless meditating

Dianne Conrad: anxiety

Nan: ate too much chocolate today

Jessica: rhizomes

Michael Dabrowski: an emergent property of neurons firing creating a stream of consciousness

Corine: yes mine

Corine: well I am aware that you are there

No, not zombies.

Kelli: no such thing as too much, Nan...

https://www.youtube.com/watch?v=8MuhFxaT7zo

Jessica: in the Deleuze and Guattari sense ;)

Consciousness as sensation

- that is, sensation as the *whole* of cognition
  - yes, there may be cities and things out there but they're not in your head
- consciousness as *simple*
  - it's not something over and above neural interaction and activation
  - it's not a 'view' of neural interaction and activation
  - *Eliminative Materialism*

    https://plato.stanford.edu/entries/materialism-eliminative/

Mental content?

- there is no means to infer from sensation to an external world
  - We can't infer to universal propositions (what Chomsky called Plato's problem).
  - We can't generalize to laws of nature (this is the problem of induction).
  - We disentangle theory from data (this is shown in Quine's two dogmas of empiricism).
- the external world is something we sense *directly*
  - J.J. Gibson - direct perception

Kelli: Relates representation of stimuli to experience

Carla Tilley: I can accept your explanation as it is your experience and your experience may influence my future understanding of a similar experience - constructivism

Corine: agreed Carla

Jessica: I feel like im waiting for Aristotle's "whole is greater than sum of parts" to make me feel special and not just a cluster of neurons etc.

Michael Dabrowski: @Jessica, but you are a sum of the neurons.

Michael Dabrowski: and it's abolutely amazing that you are conscious.

Jessica: Yey I'm special! Thank you lol

Kelli: The whole arises from the parts, and the parts can be rearranged

Jessica: hahaha

But this isn't an explanation of consciousness, is it?

- how do you explain *other* things?
- How do you frame explanations in your research?
- what do you expect from an explanation? Think about it…

A common idea of explanation has come to underlie modern scientific method as described by most non-specialists

- We observe regularities in nature

  (perhaps through experimentation or problem-solving)

- We infer to a universal principle

  (through a process of induction (or maybe, abduction)).

- We would then test, verify, and confirm this principle…

- Which becomes a scientific theory & ultimately a law of nature.

The problem is, it doesn't work.

Why Not?

- basically, for the same reasons we can't infer from sensation to an external world
  - no principle of logic or reason that will allow an inference from concrete experience to abstract universal
  - even if we could derive a universal there is no way to confirm, verify, or falsify it using data alone
- Explanations today are subject to principles of evaluation
  - consistency, clarity, comprehensiveness, utility
  - parsimony or simplicity (Ockham's razor)

But wait – How are students learning *anything then?*

- are they just memorizing sounds and shapes?

- are they *constructing* reality? But how?

leeann: they are adapting to what is acceptable in the area they are studying?

Nan: I worked once in a culture in which the dream state was considered reality

Debra: reconstructing constantly in concert with others

leeann: the common beliefs as shared by their teachers

Corine: I am sticking with constructing

Dianne Conrad: Love that example, Nan

Kelli: They are experiencing, and comparing their experiences to others' experiences, through which common representation/understanding is negotiated

Michael Dabrowski: They are constructing a subject reality from a personal perspective on the universe and their individual sensory inputs.

Carla Tilley: you are constructing your reality and learning as you construct

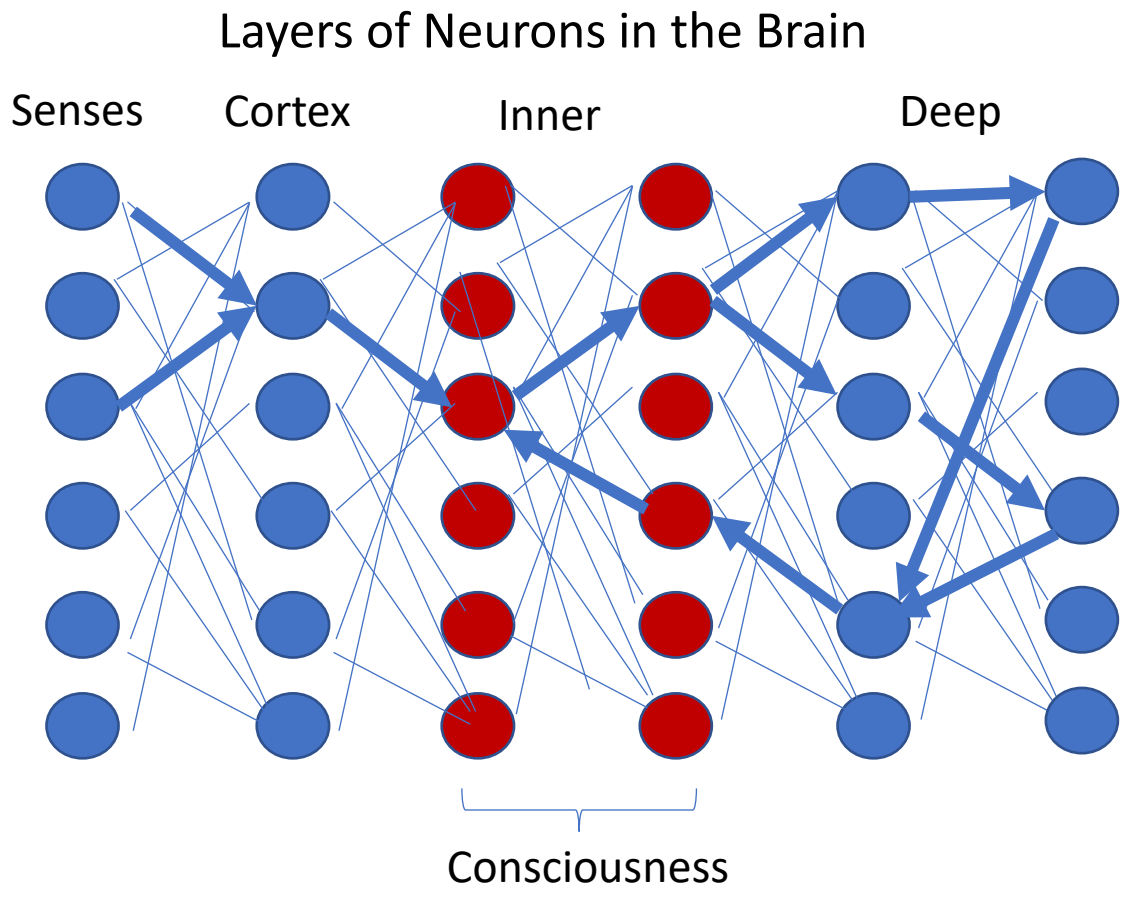
Heather: making an explanantion of the stimui

Heather: stimuli

Jessica: deduction plus intuition

Here's the Story

- the human brain is composed of layers of connected neurons.
  - the top layer (or outermost layer) is the sensory layer.
  - these are densely interconnected with the next layer
  - and the next, and so on through the visual cortex
  - through to inner layers, and beyond
- Consciousness*is* the firing of these inner layers of neurons
  - the more complex the interaction,
    the more conscious the person.


Layers of Neurons in the Brain
Senses
Cortex
Inner
Deep
Consciousness

These connections are *self-organizing*

- neural networks are *prediction* engines
  - we are constantly predicting what we expect next
  - these appear as sensations (or part of sensations) along with our other sensations
  - it's a *natural* process – no construction, no management
- this *includes* language
  - mentally, a language is nothing more than a series of shapes and sounds we read, hear and speak
  - the *formal* properties of language (syntax, semantics, etc) aren't part of consciousness at all

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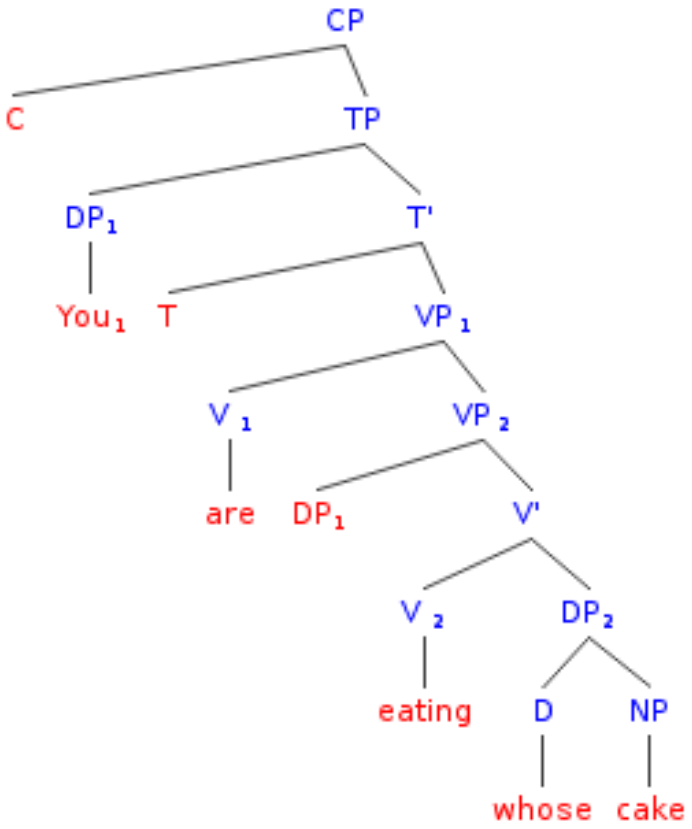
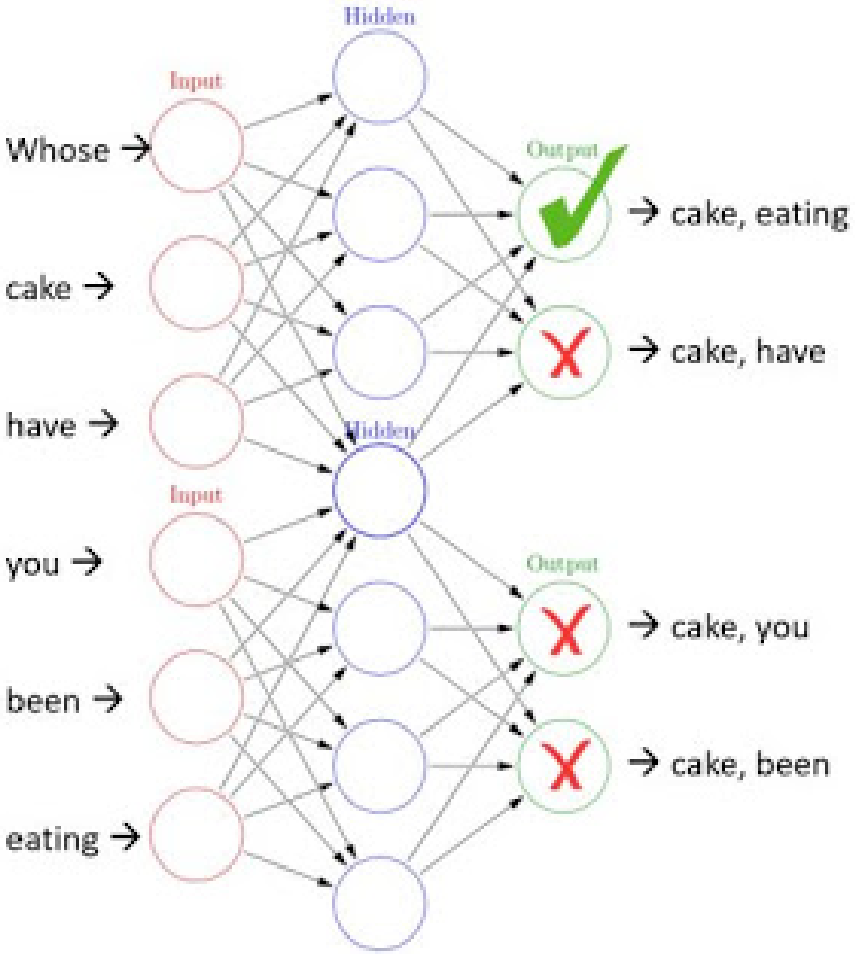
Whose cake are you eating?





Semantics is association

- this isn't just a statement about language, it's a statement about knowledge generally
  - people aren't 'constructing models' in their minds, they're constructing them in the world – in social communities
  - but if they're *learning*, they're creating associations (which are, literally, connections between neurons)

This assertion is the core of Wittgenstein's private language argument.

Learning, association, signs

- A sign is a part of the natural world.
- *Everything* leaves signs (or traces, or tracks, or indications)

- You learn about the future the way you learn about the past, by reading the signs - http://www.downes.ca/presentation/109